






iWatch Speed Awareness Program

Toolbox

	Description	Application	Pros	Cons	Photo
Neighborhood Education	The city schedules a neighborhood meeting to discuss neighborhood traffic concerns and educate the public on the benefit of pledging to obey speed limits and traffic control devices.	Community education and engagement is important to increase voluntary compliance of speed limits and has the added benefit of improving a driver’s overall behavior in a neighborhood.	<ul style="list-style-type: none">- Increased education efforts can have a sustained impact over a long period of time- Fast communication through neighborhood meeting- City can provide recent traffic data showing volumes and speeds in neighborhood- Allows residents to express their input	<ul style="list-style-type: none">- Minimal speed reduction if participation from neighborhood residents is low- Outreach limitations	
Police Enforcement	Thornton Police provides speed enforcement within neighborhood.	Police enforcement in your neighborhood typically has high impact, but only over a short period of time. Speed studies are collected to provide data to Thornton Police and help with targeted enforcement. Non-emergency number: 720-977-5150.	<ul style="list-style-type: none">- Helps catch frequent high end speeders if targeted at the right time- High impact- Effective at reducing speeds	<ul style="list-style-type: none">- Dependent on neighborhood tips to Police- Dependent on Police Department availability and priorities- Effectiveness is short term	Police Car Photo?
Speed Cushions	Speed cushions are a series of small speed humps installed across the width of the road. Designed to be wide enough to slow most cars down, but narrow enough for emergency vehicles to straddle them.	Speed cushions typically slow cars to about 15-20 mph. They are made out of asphalt material, about 3 inches high, 6.5 feet wide, and 6.5 feet in length. Reflective pavement markings (stripes on the road) are installed on the approaches to speed cushions and warning signs are installed at each location.	<ul style="list-style-type: none">- Cost: Low (per Location)- Construction Timeline: Short- Effective at reducing speeds	<ul style="list-style-type: none">- Increased noise as vehicles travel over the cushions- Not as effective on vehicles with larger wheel bases or motorcycles- Locations of speed cushions must be appropriately spaced from driveways and intersections- Not aesthetically pleasing- Multiple locations may be needed along a street for overall effectiveness	
Midblock Curb Extensions	Curb extensions visually and physically narrow the roadway. At designated crossing locations, curb extensions create safer and shorter crossings for pedestrians.	Curb extensions increase the overall visibility of pedestrians by aligning them with the parking lane and reducing the crossing distance for pedestrians. Permanent curb extensions are constructed with concrete material.	<ul style="list-style-type: none">- Increase safety for pedestrians by increasing visibility and shortening crossing widths- May encourage slower speeds by narrowing the road- Increased safety by physically preventing parking too close to the intersection- Aesthetically pleasing	<ul style="list-style-type: none">- Cost: High- Construction Timeline: Long- May create conflicts with bike lanes- Potential loss of parking for mid-block curb extensions	
Intersection Curb Extensions (also called bulb-outs)	Intersection curb extensions visually and physically narrow the roadway at intersections. Bulb-outs create safer and shorter crossings for pedestrians.	Intersection curb extensions enhance pedestrian safety by increasing pedestrian visibility, shortening	<ul style="list-style-type: none">- Encourage slower turning speeds- Increase safety for pedestrians by increasing visibility and shortening crossing widths	<ul style="list-style-type: none">- Cost: High- Construction Timeline: High- May create conflicts with bike lanes	102 nd & Quivas Picture

		crossing distances, and slowing turning vehicles.	<ul style="list-style-type: none"> - Reduced illegal parking at corners, crosswalks, and bus stops 		
Speed Monitoring Trailers	Speed monitoring trailers are designed to reinforce the speed limit by alerting drivers of their speed.	Trailers are deployed on residential city streets throughout the year on a rotating basis. The radar on each trailer will monitor the speed of an approaching vehicle and the sign on each trailer will then alert drivers to slow down when driving over the posted speed limit.	<ul style="list-style-type: none"> - Cost: Low - Portability - Provides immediate feedback to passing drivers - Moderate effectiveness at reducing speeds - Effective educational tool 	<ul style="list-style-type: none"> - Effectiveness is short term - Effective for drivers that are not deliberately speeding (not actively monitoring vehicle speed) 	Newer White Trailer Photo
Permanent Speed Monitoring Sign	Speed monitoring signs are designed to reinforce the speed limit by alerting drivers of their speed.	Permanent speed monitoring signs are typically installed on their own poles. The radar on each sign will monitor the speed of an approaching vehicle and the sign will then alert drivers to slow down when driving over the posted speed limit.	<ul style="list-style-type: none"> - Cost: Medium - Construction Timeline: Medium - Serves as frequent reminder to watch speed - Provides immediate feedback to passing drivers - Moderate effectiveness at reducing speeds 	<ul style="list-style-type: none"> - Constant flashing lights for adjacent property owners - Effective for drivers that are not deliberately speeding (not actively monitoring vehicle speed) 	TrafficLogix Photo
Raised Crosswalks	A raised crosswalk is also essentially a speed table, with a flat portion the width of the crosswalk at the top.	Raised crosswalks encourages vehicles to slow down and yield to pedestrians. Raised crosswalks are constructed with concrete material.	<ul style="list-style-type: none"> - Increase safety for pedestrians - Ideal for trail crossings - Aesthetically pleasing 	<ul style="list-style-type: none"> - Cost: High - Construction Timeline: High 	
Speed Tables	Speed tables are midblock traffic calming devices that raise the entire wheelbase of a vehicle.	Speed tables are longer than speed cushions, stretching the entire width of the road from edge of asphalt to edge of asphalt.	<ul style="list-style-type: none"> - Effective at reducing speeds - Quick install (One Day) 	<ul style="list-style-type: none"> - Cost: High - Construction Timeline: Long - Increased noise as vehicles travel over the speed table - Multiple locations may be needed along a street for overall effectiveness 	Speed Table Location? Google Street View?
Temporary Traffic Circles	Temporary traffic circles are a type of roundabout characterized by a small diameter and central island and splitter islands.	Temporary traffic circles lower speeds at minor intersection crossings and are an ideal treatment for uncontrolled intersections. Temporary traffic circles are installed by using flexible rubber material. Although classified as temporary, the device has the potential to be left indefinitely.	<ul style="list-style-type: none"> - Cost: Low - Construction Timeline: Low - Temporary device with potential to be left indefinitely - Enhances operation and safety of intersection by reducing conflicts - Encourage slower turning speeds 	<ul style="list-style-type: none"> - Could face frequent damage and repairs - Requires maintenance - Tend to collect or trap trash - May affect larger vehicles if travel lanes are tightened - Not aesthetically pleasing 	

Temporary Curb Extensions	Temporary curb extensions visually and physically narrow the roadway. At intersections and designated crossing locations, curb extensions create safer and shorter crossings for pedestrians.	Temporary curb extensions encourages slower speeds when traveling through or turning at an intersection. Temporary curb extensions are installed by using flexible rubber material. Although classified as temporary, the device has the potential to be left indefinitely.	<ul style="list-style-type: none"> - Cost: Low - Construction Timeline: Low - Temporary device with potential to be left indefinitely 	<ul style="list-style-type: none"> - Could face frequent damage and repairs - Requires maintenance - Tend to collect or trap trash - May affect larger vehicles if travel lanes are tightened - Not aesthetically pleasing - Decreases the overall width of the roadway 	
Narrowing Lanes (Striping)	Striping used to narrow traffic lanes. This can be used to create bicycle lanes	Narrower lanes encourages slower vehicle speeds	<ul style="list-style-type: none"> - Cost: Low - Construction Timeline: Low - May reduce travel speeds 	<ul style="list-style-type: none"> - Requires maintenance - Increased resurfacing cost 	Striping Location?
<p>Notes:</p> <p><i>Cost:</i></p> <p>Low: \$0 - \$4,999</p> <p>Medium: \$5,000 - \$24,999</p> <p>High: \$25,000+</p> <p><i>Construction Timeline:</i></p> <p>Short: 1 to 90 days (Dependent on city contractor availability)</p> <p>Medium: 3 to 6 months (Dependent on city contractor availability and material availability)</p> <p>Long: 1 to 3 years (Feasibility study and engineering design may be required)</p> <p>Note: Construction timeline may be highly impacted by weather, material availability, etc.</p>					

Sources:

Curb Extensions - <https://nacto.org/publication/urban-street-design-guide/street-design-elements/curb-extensions/>

Raised Crosswalk - <https://safety.fhwa.dot.gov/saferjourney1/library/countermeasures/29-30.htm>

Temporary Traffic Circle - <https://nacto.org/publication/urban-street-design-guide/intersections/minor-intersections/mini-roundabout/>

Speed Tables - <https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/speed-table/#:~:text=Speed%20tables%20are%20midblock%20traffic,a%20length%20of%2022%20feet.>

Intersection Curb Extensions - <https://www.sfbetterstreets.org/find-project-types/pedestrian-safety-and-traffic-calming/traffic-calming-overview/curb-extensions/>